PROJECT REFERENCE NO.	SHEET NO.
B-4047	UC-2
DESIGNED BY: CSG	
DRAWN BY: CSG	
CHECKED BY: RBW	
APPROVED BY: RBW	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
PROJECT SERVICES UNIT PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 10157 RONALD B. WILKINS
1/20/09

UTILITY CONSTRUCTION

8/17/99

REVISIONS

PI Sta 9+54.09
△ = 0° 57' 39.2" (RT)
D = 1° 08' 45.3"
L = 83.85'
T = 41.93'
R = 5,000.00'

PI Sta 12+72.70
△ = 1° 44' 00.4" (RT)
D = 1° 00' 18.7"
L = 172.45'
T = 86.23'
R = 5,700.00'
e = SEE PLAN

PI Sta 16+14.58
△ = 14° 21' 59.3" (RT)
D = 3° 48' 25.3"
L = 377.37'
T = 189.68'
R = 1,505.00'
e = SEE PLAN

PI Sta 20+19.28
△ = 39° 27' 59.5" (LT)
D = 15° 29' 07.2"
L = 254.86'
T = 132.72'
R = 370.00'

TYPE "2"
(BEDDING FOR D.I. PIPE)

PIPE BEDDED IN FLAT-BOTTOM TRENCH. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL, IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROX. 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

NC GRID NAD 83

POT Sta. 9+00.00

BEGIN TIP PROJECT B-4047
-L- STA 9+45

PCSta. 9+12.16

PTSta. 9+96.01

PROP. 576'-6" DI WATER PIPE, PC 350
PROP. 2-6" 11 1/2° DI BENDS
PROP. 1-6" GATE VALVE & VALVE BOX, 200# WP

-L- PC Sta. 11+86.47

-L- PT Sta. 13+58.92

PCSta. 14+24.90

PROP. 280'-6" DI WATER PIPE, PC 350
PROP. 2-6" 22 1/2° DI BENDS
PROP. 2-6" 45° DI BENDS
PROP. 1-6" GATE VALVE & VALVE BOX, 200# WP

-L- PT Sta. 18+02.27

PCSta. 18+86.56

PTSta. 21+41.42

BEGIN BRIDGE
-L- POC STA 14+59.53
BEGIN APPROACH SLAB
-L- POC STA 14+45.58

END BRIDGE
-L- POC STA 15+99.59
END APPROACH SLAB
-L- POC STA 16+13.57

ABANDON 2' BASE LATERAL DITCH W/PSRM SEE DETAIL B

ABANDON REMOVE SYSTEM

STRUCTURE PAY ITEM

STRUCTURE PAY ITEM

STD. 2' BASE DITCH W/PSRM SEE DETAIL D

SPECIAL CUT DITCH W/PSRM SEE DETAIL A

SPECIAL CUT DITCH W/PSRM SEE DETAIL A

2' BASE LATERAL DITCH W/PSRM SEE DETAIL B

SPECIAL CUT DITCH W/PSRM SEE DETAIL A

BEGIN SBG STA. 14+23

CL. II RIP RAP @ EMBANKMENT SEE DETAIL E EST. 150 TONS EST. 190 SY F.F.

END SBG STA. 16+35 LT 75', PROP. R/W

CL. II RIP RAP 7 TONS 17 SY FF

STD. 'V' DITCH SEE DETAIL C

SPECIAL CUT DITCH SEE DETAIL G

SPECIAL CUT DITCH SEE DETAIL F

FILL HOLE & GRADE TO PROVIDE MIN. 1' COVER OVER PIPE EST. 35 CY

FLATTEN BANK TO 2:1 FROM 55' LT. TO 65' RT.

CL. II RIP RAP EST. 3 TONS

6'-0" MIN. (TYP.)

JOHN & KATHY STROUP
D.B. 650 PG 297-298
D.B. 1405 PG 486-489

FRED A. STROUP
D.B. 1405 PG 474-477

HOVIS LEE & BETTY JANE GLADDEN
D.B. 142 PG 607

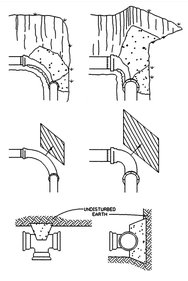
STEPHEN H. STROUP
D.B. 1405 PG 482-485

BROOKWOOD BAPTIST CHURCH
DB 214 PG 252

SR 1972 (BROOKWOOD CHURCH RD.)

TO NC 18

MAXIMUM TRENCH WIDTH AT TOP OF PIPE			
NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		

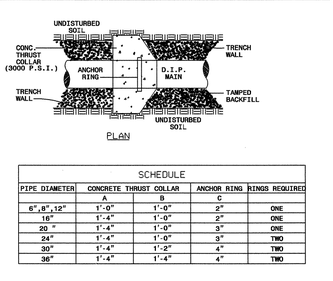


MINIMUM CONCRETE BLOCKING (C.Y.) *					
NOM. PIPE DIA. IN.	TEES & DEAD ENDS	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND
4	1/3	1/3	1/3	1/3	1/3
6	1/3	1/3	1/3	1/3	1/3
8	1/3	½	1/3	1/3	1/3
10	2/3	¾	½	1/3	1/3
12	¾	1.0	2/3	1/3	1/3
14	1.0	1-1/2	¾	½	1/3
16	1-1/3	2.0	1.0	½	1/3
18	1-2/3	2-1/3	1-1/3	2/3	1/3
20	2.0	3.0	1-2/3	¾	½
24	3.0	4-1/3	2-1/3	1-1/3	2/3

* CONCRETE SHALL BE 3000 P.S.I. MIX.

NOTE:
NO CONCRETE SHALL COVER BOLTS OR GLANDS.

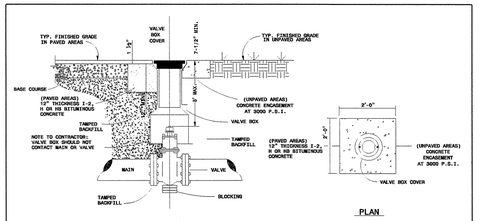
STANDARD REACTION BLOCKING



SCHEDULE				
PIPE DIAMETER	CONCRETE THRUST COLLAR		ANCHOR RING	RINGS REQUIRED
	A	B	C	
6",8",12"	1'-0"	1'-0"	2"	ONE
16"	1'-4"	1'-0"	2"	ONE
20 "	1'-4"	1'-0"	3"	ONE
24"	1'-4"	1'-0"	3"	TWO
30"	1'-4"	1'-2"	4"	TWO
36"	1'-4"	1'-4"	4"	TWO

NOTE:
6" TO 16" MAINS = 12-NO. 7 BARS
20" TO 36" MAINS = 12-NO. 8 BARS
BARS PLACED AS SHOWN

STANDARD THRUST COLLAR INSTALLATION



STANDARD VALVE BOX INSTALLATION